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A SYMPOSIUM

ON THE VALUE OF HUMANISTIC, PARTICULARLY CLASSICAL, STUDIES
AS A PREPARATION FOR THE STUDY OF MEDICINE AND OF
ENGINEERING, FROM THE POINT OF VIEW OF THE
PROFESSIONS¹

I. THE VALUE OF GREEK AND LATIN TO THE MEDICAL STUDENT

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Mr. Chairman and Gentlemen:

The disciplinary value of the study of the classics has been generally recognized by educators for hundreds of years, and it is no less today than it was a generation ago. All teachers agree that there is no royal road to knowledge, and this sentiment has been attested by such axiomatic phrases as, *non palma sine pulvere, ad astra per aspera*, etc., which all have approved and none denied since the time of Cicero and Sallust. *Nil sine magno vita labore dedit mortalibus*, "There is no excellence without great labor," is trite enough, but as true as trite; and now that we know more of the operations of the mental faculties than the best

¹ Part of the program of the Classical Conference at Ann Arbor, Mich., March 29, 1906. A similar symposium, on "The Value of Humanistic Studies as a Preparation for the Study of Law and of Theology," will form a part of the program of the next conference, in March, 1907.

Through the kind assistance of the Board of Regents of the University of Michigan and the courtesy of the publishers of the *School Review*, it has been possible to secure a number of reprints of this Symposium for distribution among teachers and students. Those desiring a copy may address (inclosing a two-cent stamp for postage): MR. LOUIS P. JOCELYN, Secretary Michigan Schoolmasters' Club, South Division Street, Ann Arbor, Michigan.

teachers of former generations knew, the truth of this old "saw" has been intensified to the n th power. No one can become a student of anything until he learns how to study, and he does this only under the whip of application. No knowledge, save that of the most superficial character, is easily acquired. Like gold, true knowledge lies beneath the surface, and he who would possess it must dig for it, and systematic education should begin in learning how to use the senses—the pick and shovel, as it were, of the mind. The five senses are the only avenues through which we acquire knowledge, and even the most brilliant pictures of our imaginations are but perceptions previously acquired through the senses, and subsequently rearranged and projected onto the sensitive retina of mental vision. Although we cannot define mind, we know something of its *modus operandi*. We know that the pyramidal cells of the cortex of the brain must be brought into relation with the non-ego; that this connection can be made only through the nervous mechanism of the special senses, and that this machinery does fine and effective work only when nicely adjusted under the guidance of long experience. Like the gastric cells, the pyramidal cells of the brain atrophy with disuse, as happens when fed upon predigested food; and if I may express an opinion here parenthetically, I will state that too much of this kind of pabulum is dealt out to the young in both our secondary and higher institutions of learning. There has been found nowhere a better training for the thinking apparatus of the young than the study of Latin and Greek. The great number and variety in the inflections of noun and verb render close attention an absolute necessity, and this, in and of itself, is of the greatest value in an educational way. Carelessness and superficiality are incompatible with any thorough study of Greek and Latin. Besides, with the close attention that the student must give to the variations in the structure of words, he soon begins to perceive that these indicate variations in the shade of meaning, and then the joy of study takes possession of the student. His observation is sharpened, his perception becomes more delicate, and he finds increased pleasure in the intensity with which he seeks fully and correctly to interpret the author's meaning. And this habit of close observation, of attention to detail, of looking for fine distinctions and shades of difference, and the alertness of mind possessed by an individual of this habit, will be of inestimable service to him, should he choose medicine for his profession,

both in his experimental work in the laboratory and at the bedside of his patient. This point in favor of the study of Greek and Latin, it seems to me, is not easily overestimated. Indeed, the progress of medicine is determined largely by the accuracy and precision with which observations are made. The careless or the superficial man is not suited either to the practice of medicine or to the conduct of experiments for the elucidation of medical problems. It is the painter who brings out detail, and not the impressionist, who is needed in scientific medicine. The best medical schools are rapidly advancing their requirements for admission, and now demand from two to four years of collegiate work, while the academic faculties are filling these two to four years largely with loosely regulated electives; and I am by no means certain that in fact the medical student of today has a better preparation for his professional study than his prototype of fifty or more years ago. William Harvey, whose keenness and accuracy of observation led to the discovery of the circulation of the blood, after many years devoted to the classics, gave five to the study of medicine, and his fitness was proved by his work.

The direct value of Greek and Latin, especially of the former, as aids to the exact meaning of medical terms, as shown by their derivations, is disputed by no one. But some do claim that the giving of from four to six years, or even more, to the digging of Greek roots and the trimming of Latin stems is too big a price to pay for the result, however valuable it may be; and possibly this is right, if the student gets nothing but a knowledge of etymology from his classical studies, and if the time and energy given to the classics are so excessive that he cannot seek knowledge in other fields. The education that best fits one for the study of medicine certainly should not be narrow, and I would not have the preliminary training of the prospective medical man confined to Greek and Latin, nor would I give to the classics an undue share of time and energy. But when, in addressing my medical students, I use a new term—for instance, when I speak of a “*toxigenic bacillus*” or a “*pathonogmonic symptom*”—I can easily distinguish the students who have a fundamental knowledge of Greek from those to whom this basic language—certainly basic so far as medical terms are concerned—is indeed a dead language. Years of frequent and careful consultation of the dictionary may make good this plainly evident deficiency, which, however, does not exist for the student who

has been drilled in Greek in his preliminary education. Medicine is, now at least, a rapidly progressive science, and even the dictionaries do not keep pace with its advancement. It not infrequently happens that an earnest medical student comes to me with the statement that he cannot find a certain word—"galactotoxismus," for instance—in his dictionary. If such a student had had a fundamental training in Greek, he would not have needed to consult a dictionary in order to ascertain the meaning of this word. Besides, I am of the opinion that the best dictionary, frequently consulted, cannot give to one wholly ignorant of Greek the correct, clear, and full appreciation of the meaning of such a word as "sitotoxismus" as comes unsought to the one versed in Greek. Of the two languages, Greek is of much more value than Latin as an aid in the comprehension of medical terms; and it seems to me regrettable that at least two years of good, solid work in Greek cannot be demanded as an unconditional requirement for admission to our medical schools.

It has been said that the use of Latin names in medicine, and especially in the writing of prescriptions, is pure affectation and should be discontinued. This statement is wholly erroneous and could be made only by one grossly ignorant of the facts. The word "salt" may mean any one of a thousand compounds, but "sodii chloridum" and "magnesi sulphas" are definite and signify definite compounds, and are capable of only one interpretation, be the reader English, French, German, Russian, Italian, or Spanish. For the purpose of designating a certain plant, or the extract of a certain plant, the common name cannot be used, because it may not be the same even in different sections of the same country, while the scientific or Latin designation is the same the world over. The language employed by an exact science, like chemistry or bacteriology, must be one which has already crystallized, and not one which means one thing today and may have quite another meaning a year from now, or even a century in the future. We must not forget, even in the pursuit of the rapidly growing modern sciences, that there is also a science language, and that it, like everything else mundane, comes into existence, goes through a process of evolution, suffers modifications from its environment, and does not crystallize into exactness until it is no longer used orally; and not until this final period is reached, and it is no longer subject to

material modification, does it become the suitable form for exact, scientific expression.

I have given thus briefly and imperfectly some of the reasons of a practical character as to the value of Greek and Latin to the prospective medical student. There is much more that might be said. The boy who has not studied these languages has missed the full and satisfying pleasure that comes to him who reads in the original the wonderful epic of Homer and the stately lines of Virgil, has caught the full force of the eloquence of Demosthenes and of Cicero, has had a bout with Horace and helped Cæsar build his wonderful bridge; and *mirabile dictu*, I believe that the boy who has had the wider view given by a study of the classics will be all the stronger in both experimental and practical medicine on account of the knowledge and wisdom gained from the wise men of Greece and Rome.

II. DISCUSSION OF DR. VAUGHAN'S PAPER

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Mr. Chairman, Ladies and Gentlemen:

I esteem it a privilege to address this assembly for any cause, but chiefly, I confess, because it lies in your province, and you have the power, to do what I hope will be done in the near future—restore the study of Greek to a proper position, so far as my profession is concerned.

You cannot discuss a paper without disagreeing with the statements contained in that paper. Now, I do not disagree with Dr. Vaughan, in the slightest particular. As a teacher of medicine who has been working at it for thirty-seven years, I surely ought to be able to appreciate the importance of what Dr. Vaughan has said. While I cannot say anything in addition, I wish to lend my support and give as much emphasis as possible to each of his contentions; for an additional favorable opinion in any controversy adds to the weight of the arguments adduced and to the strength of the position taken. I have this matter very much at heart, which is indeed my only excuse for addressing you. The medical profession is not only employing Greek and Latin terms, using them at all times, but it is also coining them, and often doing so very incorrectly. The way Latin beginnings have tacked on to them Greek endings has come to be an abomination. Such illiteracy is making a laughing-stock of the profession in the opinion of men of the most ordinary culture.

But there is something worse than that. It is surely breaking one of the first